Chapter

5

# FACILITY REQUIREMENTS


Chapter

5

# FACILITY REQUIREMENTS

*for the Airport Master Plan for Whiteriver Airport*

## 5.0 INTRODUCTION

One of the primary objectives of an airport planning study is the determination of future development requirements for the airport, including the airfield, the terminal areas, and all other areas within the airport property boundaries. This airport planning study was developed to ascertain the level of changes in demand and trends currently experienced by the Whiteriver Airport, as well as to determine the airport developments necessary to accommodate future aircraft and passenger demand.

The purpose of this chapter is to establish general facility requirements for future development of the Whiteriver Airport. This chapter will lay out the specific airside and landside facilities which will meet the design standards according to the Airport Reference Code (ARC) and design aircraft group as determined in the preceding chapter.

As described in Chapter IV, Forecast of Aviation Activity, the existing ARC for the Whiteriver Airport is a B-II weighing less than 60,000 pounds. The future ARC is expected to remain a B-II, however, limited operations by B-III aircraft weighing upwards of 80,000 pounds are expected. The airside and landside facility requirements as recommended in this chapter are given according to B-II standards with pavement strength requirements of 80,000 pounds.

## 5.1 AIRSIDE FACILITY REQUIREMENTS

The airside facilities of an airport are described as the runway configuration, the associated taxiway system, the ramp and aircraft parking area, and any visual or electronic approach aids.

### 5.1.1 Runway Requirements

Demand/Capacity: The Annual Service Volume (ASV) for the Whiteriver Airport was analyzed in Chapter IV, Forecast of Aviation Activity, Section 4.11. It was determined that the Whiteriver Airport will operate within its capacity with one runway for the entire twenty year planning period of this study.

Length: The FAA has developed a computer software program entitled "Airport Design" which provides the user with recommended runway lengths and other facilities on an airport according to certain criteria. The information which is required to execute the program for recommended runway lengths includes airfield elevation, mean maximum temperature of the hottest month, and the effective gradient for the runway. This specific information for the *existing* airport site at Whiteriver Airport was used for the purposes of this portion of this study:

| | |
|---|---|
| Field Elevation | 5,152 Feet |
| Mean Maximum Temperature of Hottest Month | 80.5° F |
| Effective Gradient | 71 Feet |

(*Note: The actual difference in feet from runway end to runway end is required to run the FAA software program and is listed as the effective gradient. However, the effective gradient is usually shown as a percent, which is 0.76% percent for the existing runway at the Whiteriver Airport.*)

With this data, the Airport Design program provides several runway length recommendations for both small and large aircraft according to varying percentages of aircraft fleet and associated takeoff weights. A summary of the data provided by the program is listed in Table V-1.

**TABLE V-1**
**EXISTING AND RECOMMENDED RUNWAY LENGTHS**

| Description | Runway Length |
|---|---|
| ***Existing*** | |
| Runway 1/19 | 6,288 feet |
| ***Recommended to accommodate:*** | |
| Small Aircraft ( < 12,500 lbs.) | |
| Less than 10 passenger seats | |
| 75 percent of these small airplanes | 4,520 feet |
| 95 percent of these small airplanes | 6,120 feet |
| 100 percent of these small airplanes | 6,260 feet |
| 10 or more passenger seats | 6,260 feet |
| Large Aircraft (> 12,500 lbs, < 60,000 lbs.) | |
| 75 percent of these planes at 60 percent useful load | 7,110 feet |
| 75 percent of these planes at 90 percent useful load | 9,300 feet |
| 100 percent of these planes at 60 percent useful load | 9,880 feet |
| 100 percent of these planes at 90 percent useful load | 11,650 feet |

*Source: FAA computer software program, Airport Design Version 4.1B*

Using the results of the FAA's software program, it would be fair to suggest that the runway at the Whiteriver Airport should have a minimum length of 6,260 feet to accommodate all aircraft in the current and future critical ARC of B-II. However, it is important to also consider the runway lengths required for some of the larger and faster aircraft which are projected to use the airport.

Takeoff distance requirements for aircraft utilizing Whiteriver Airport:
When determining runway length requirements for any airport, it is imperative to consider the type of aircraft (aircraft design group and critical aircraft) which will be using the airport and their respective takeoff distance requirements. As an example, Table V-2 gives examples of takeoff distance requirements for the aircraft determined in Chapter IV to be typical aircraft of various ARCs which currently use, and are expected to use the Whiteriver Airport in the future.

**TABLE V-2**
**PERFORMANCE CHARACTERISTICS FOR AIRCRAFT OPERATING AT THE WHITERIVER AIRPORT[1]**

| Aircraft | Airport Reference Code | Takeoff Weight | Required Runway Length[1] |
|---|---|---|---|
| Citation I/SP | B-II | 11,850 | 4,320 |
| Falcon 20 | B-II | 26,000 | 6,948 |
| Falcon 20 | B-II | 18,000 | 3,558 |
| Merlin IVC | B-II | 12,500 | 4,463 |
| Merlin IVC | B-II | 16,000 | 6,248 |
| DC-4 | B-III | 66,000 | 6,200 |
| DC-6 | B-III | 84,000 | 6,200 |
| DC-6 | B-III | 94,000 | 7,400 |
| Learjet 23 | C-I | 10,500 | 4,903 |
| Learjet 23 | C-I | 12,000 | 7,274 |
| Learjet 25 D/F | C-I | 12,000 | 4,119 |
| Learjet 25 D/F | C-I | 15,000 | 6,751 |
| Learjet 31 | C-I | 16,500 | 6,245 |
| Grumman G-III | C-II | 69,700 | 8,055 |
| Grumman G-III | C-II | 58,000 | 5,653 |
| Grumman G-IV | D-II | 55,000 | 4,803 |
| Grumman G-IV | D-II | 63,000 | 6,771 |

[1] *Aircraft performance data based on density altitude of 6,345 feet using a mean maximum temperature of the hottest month of 80.5°F and an airport elevation of 5,152 feet MSL.*

The existing runway length of 6,288 feet will accommodate the critical aircraft fleet, (B-II weighing less than 60,000 pounds). Larger and faster aircraft will be limited by the existing runway length. The DC-4, with a maximum certificated takeoff weight of 73,000 pounds will be limited to approximately 66,000 pounds. The DC-6, with a maximum certificated takeoff weight of 104,000 pounds will be limited to approximately 84,000 pounds. Because of the relatively short haul for these aircraft to suppress wild fires on the Reservation, fuel load will most likely be reduced, rather than slurry payload, to achieve the reduced takeoff weight. Some business jet aircraft with ARCs of C-I and C-II will also have to reduce a combination of fuel and/or payload to operate out of Whiteriver Airport; however, the forecasted number of operations by these aircraft does not justify the expense and impacts of extending the runway.

Summary: The FAA's software program, Airport Design, provides recommended runway lengths based on the types of aircraft using the airport. The existing runway length at Whiteriver Airport is sufficient to accommodate the current and future design aircraft. Large air tankers and some business jet aircraft will need to operate at reduced takeoff weight to account for the runway length, altitude, and temperature; however, these aircraft are not forecasted to achieve a sufficient number of operations to justify a runway extension. Therefore, maintaining the existing runway length of 6,288 feet is recommended.

Strength and Width: Runway strength requirements are normally based upon the design aircraft which may be expected to use the airport on a regular basis. For the Whiteriver Airport, the strength of the runway should be a minimum of 80,000 pounds Dual Wheel Gear (DWG) to accommodate the large air tankers expected to utilize the airport in the future. Although these aircraft are forecasted for only 50 annual operations, they risk significant damage to the pavement if is not adequately strengthened.

The FAA recommends that runways which serve aircraft having an ARC of B-II should have a minimum width of 75 feet. This applies throughout all periods of this study.

### 5.1.2 Crosswind Runway Requirements

Meteorological data, specifically wind data, can be analyzed to determine the need for a crosswind runway at an airport. The FAA recommends that a runway's orientation should provide at least 95 percent crosswind coverage. These crosswind components are displayed in Table V-3. If the wind coverage of the runway does not meet this 95 percent minimum for the appropriate ARC, then a crosswind runway may be considered.

**TABLE V-3**
**ALLOWABLE CROSSWIND COMPONENTS**

| Allowable Crosswind in Knots | Airport Reference Code |
|---|---|
| 10.5 Knots | A-I & B-I |
| 13.0 Knots | A-II & B-II |
| 16.0 Knots | A-II, B-III, & C-I through D-III |
| 20.0 Knots | A-IV through D-VI |

As noted in Chapter II, Facility Inventory, analysis of wind data collected in Whiteriver, Arizona indicates sufficient wind coverage with the existing runway alignment at the Whiteriver Airport. This analysis was further supported by airport user survey responses, and airport management personnel. An Automated Weather Observation System should be installed

to record wind data at the airport and to provide pilots with current meteorological information.

### 5.1.3 Taxiway Requirements

Length and Width: The construction of parallel taxiways is considered essential at airports which have at least 20,000 annual operations, and is recommended for airports serving aircraft weighing more than 12,500 pounds. Based on this recommendation and the aviation forecasts developed in Chapter IV, the Whiteriver Airport should have a full length parallel taxiway which serves the primary runway. In order to accommodate the airport's existing and ultimate design aircraft groups, this taxiway should be located a minimum of 240 feet from the runway centerline to the taxiway centerline and be at least 35 feet wide.

Strength: At the minimum, the strength of the taxiway should be maintained at a strength equal to that of the primary runway pavement.

### 5.1.4 Navigational Aids

A Navigational Aid (NAVAID) is any ground based visual or electronic device used to provide course or altitude information to pilots. NAVAIDs include VORs (Very High Frequency Omnidirectional Range), VORTACs (Very High Frequency Omnidirectional Range with Tactical Information), NDBs (Nondirectional Beacon), and TACANs (Tactical Air Navigational Aid), as examples. The closest NAVAID to Whiteriver Airport is the NDB at Show Low, 26 NM to the north.

Although NAVAIDs provide important information to approaching, departing, and en route pilots, installation of a ground based NAVAID at Whiteriver Airport is not recommended. The FAA is moving away from all ground based navigation aids and does not support the installation, operation, and maintenance costs of new ground based equipment. For these reasons, the airport should plan for a future nonprecision instrument Global Positioning System (GPS) approach.

Nonprecision GPS approaches do not require ground based facilities on or near the airport for navigation, as a GPS receiver uses satellites for navigation. Therefore, it involves little or no cost for the Airport Sponsor. GPS was developed by the United States Department of Defense for military use, and is now available for civilian use. GPS approaches are rapidly being commissioned at airports across the United States on a priority basis. A phase out of all ground based navigational aids is expected by the year 2007.

### 5.1.5 Airfield Lighting, Signage, and Marking

Currently, Runway 1/19 is lighted with Medium Intensity Runway Lights (MIRLs). Medium Intensity Taxiway Lights (MITLs) are located at each exit taxiway only. The lighting system is used to outline the edges of runways during darkness or restricted visibility conditions. The airfield lighting at Whiteriver Airport is particularly important to pilots, since the airport does not have an Air Traffic Control Tower (ATCT) and may not be manned continuously throughout the twenty-four hour period. The lighting system is reported to be unreliable with lighting outages occurring frequently. A recommendation of this study is to install a new lighting system that incorporates electrical conduit and duct. This will reduce the potential of electrical failures in the runway lighting system. The lighting should be pilot controlled which is activated by clicks of the aircraft microphone.

The parallel taxiway at the airport should be equipped with Medium Intensity Taxiway Lights (MITLs) for its entire length and at all of the exits.

A standard rotating beacon should be installed at the airport for airport identification. Also, the segmented circle and wind cones should continue to be lighted.

The Whiteriver Airport should install airfield signs which will meet the FAA standards in Advisory Circular 150/5340-18C, "Standards for Airport Sign Systems."

The runway should be marked with nonprecision instrument markings to coincide with the anticipated GPS nonprecision instrument approach.

### 5.1.6 Visual Aids

Whiteriver Airport is not currently equipped with any runway visual aids. Precision Approach Path Indicators (PAPIs) should be installed at both runway ends when the lighting system is upgraded. PAPIs, like VASIs, provide visual descent guidance information during the approach to the runway. The PAPIs consist of either two or four light units located to the left of the runway and perpendicular to the runway centerline. If the aircraft is above the glidepath, the pilot will see all white lights. If the pilot is on the proper glidepath, the light units closest to the runway will be red and those farthest from the runway centerline will be white. When the pilot is below the glidepath all of the light units will be red. PAPIs have an effective visual range of approximately five miles during the day and up to 20 miles at night.

Runway End Identifier Lights (REILs) should also be installed at both runway ends. REILs are synchronized flashing lights located laterally on

each side of the runway threshold. They provide rapid and positive identification of the threshold of a runway.

### 5.1.7 Aircraft Apron

The apron space requirements as shown in this planning document were developed according to recommendations given in AC 150/5300-13 "Airport Design". Consideration must be made in the overall apron requirements for aircraft parking and tiedown requirements, taxilanes, adjacent taxiways, proximity to buildings, including the FBO and fueling area. The apron layout should be designed to accommodate all aircraft expected to use the airport, including turboprops and business jets.

Tiedown Requirements: Aircraft tiedowns should be provided for those small and medium sized aircraft utilizing the airport. These aircraft risk being damaged or may cause damage or injury in sudden wind gusts if not properly secured. A number of tiedowns are required to accommodate the peak daily transient aircraft and overnight transient aircraft, plus based aircraft. Tiedown requirements for the 20 year planning period are listed in Table V-4.

Apron Requirements: Generally speaking, an apron tiedown area must allow approximately 360 square yards per transient aircraft and 300 square yards per based aircraft. This square yardage per aircraft provides adequate space for tiedowns, circulation and fuel truck movement. Currently, the aircraft parking apron is approximately 5,100 square yards in area with 12 tiedowns. Based on these factors, the aircraft tiedown requirements and apron pavement requirements were calculated and are depicted in Table V-4.

**TABLE V-4**
**APRON AND TIEDOWN REQUIREMENTS**

| Year | Based Aircraft | Transient Aircraft | Total Tiedowns Required | TOTAL Apron S.Y. Required[1] |
|---|---|---|---|---|
| 1996 | 3 | 7 | 10 | 3,400 |
| 2001 | 4 | 8 | 12 | 4,100 |
| 2006 | 5 | 10 | 15 | 5,100 |
| 2016 | 5 | 12 | 17 | 5,800 |

[1] *Rounded to nearest 100 S.Y.*

## 5.2 LANDSIDE FACILITY REQUIREMENTS

Landside facilities are an equally important aspect of the airport. Landside facilities serve as the processing interface between the surrounding community and the airport operating environment. Likewise it offers the

traveler the first impression of the airport and the local area. Landside facilities house the support infrastructure for airside operations and often generate substantial revenues for the airport. Landside facility requirements for the Whiteriver Airport were developed after a thorough analysis of FAA planning guides which relate to facility requirements for nonhub locations and for general aviation operations.

### 5.2.1 Terminal Building

The construction of a terminal building at any airport offers many amenities to passengers, local and transient pilots, and airport management. Terminal buildings most often house public restrooms, public telephones, as a pilot's lounge, and information regarding airport services. At general aviation airports with minimal passenger throughput, the FBO facility often provides many of the services listed above. A terminal building is normally not warranted if the FBO fulfills these functions.

In the case of the Whiteriver Airport, trailers are provided for the contract fire management operators and the "Helitack Shack" is used as a pilot's lounge area. Passenger throughput is not significant to warrant a separate terminal building.

### 5.2.2 Hangar Facilities

Hangars are typically classified as either (1) T-Hangars (small single storage units which usually accommodate single engine aircraft only), or (2) Conventional hangars (small to very large units which accommodate a variety of aircraft types or corporate fleets). The number of aircraft that each conventional hangar can hold varies according to the manufacturer and the specifications of the airport owner or operator. Hangar requirements for based and transient aircraft are discussed below and are depicted in Table V-5

Future facility requirements for based aircraft can be computed by making a determination of the number of tiedown locations, number of shaded spaces, number of T-hangars and number of conventional type hangars required. The contract fire management aircraft are based at the airport for approximately five to six months of the year. These aircraft do not utilize hangar facilities. Forecasts estimate one additional based aircraft in the future which is also not likely to be hangared.

Future aircraft storage requirements will likely be met with the construction of sunshades. Sunshades are an economical alternative to hangar construction. Sunshades provide overhead cover without walls or doors, and provide protection from the effects of prolonged exposure to sun and rain. For future estimates, half of the available tiedown spots should be equipped with sunshades.

TABLE V-5
AIRCRAFT HANGAR/SUNSHADE REQUIREMENTS

| Year | Tiedown Spots | Total Sunshades |
|---|---|---|
| 1996 | 12[1] | 0[1] |
| 2001 | 12 | 6 |
| 2006 | 15 | 8 |
| 2016 | 17 | 9 |

[1] *Existing number.*

### 5.2.3 Aviation Fuel Facilities

Fuel storage at the Whiteriver Airport includes one below ground 5,000 gallon tank used for storing Jet-A fuel. A fuel truck has been utilized during the fire suppression season to supply 100 LL Aviation Gas (AV Gas).

Since fuel flow data is not available for Whiteriver Airport, fuel storage requirements are based on the average forecasted number of annual operations and a fuel ratio estimated by analyzing fuel flowage data at the San Carlos Apache Airport provided by Mace Aviation. A review of fuel delivery receipts from Mace Aviation for 1994, 1995, and 1996 indicated an average annual consumption of 9,495 gallons of AV Gas and 7,265 gallons of Jet-A fuel. Dividing the annual consumption by the estimated annual operations results in the estimated average consumption of fuel provided by the FBO per operation, or the fuel ratio. Multiplying the fuel ratio by the forecasted annual operations for Whiteriver Airport results in the forecasted annual fuel requirement at the airport. This annual fuel storage requirement can then be subdivided by delivery frequency to determine storage tank capacity requirements or by storage tank capacity to determine delivery frequency requirements. Fuel storage requirements are shown in Table V-6.

A 5,000 gallon AV Gas above ground storage tank is scheduled for installation in the summer of 1997. With this storage capacity, deliveries of 100LL AV Gas will be required approximately once per year, or more frequently with smaller delivery quantities. Semi-annual deliveries are recommended to avoid allowing the fuel to set in the tanks unused for long periods of time. The AV Gas storage capacity, assuming the installation of the proposed tank, should be considered adequate for the planning period. By the planning year 2016, deliveries of Jet-A fuel will be required approximately four times per year with the current storage capacity. This is an acceptable delivery frequency and the current storage capacity should be considered adequate for the planning period.

TABLE V-6
FUEL STORAGE CAPACITY REQUIREMENTS

| Fuel Storage Requirements | | | | |
|---|---|---|---|---|
| | **1996** | **2001** | **2006** | **2016** |
| Annual Operations | 3,933 | 4,950 | 5,650 | 6,650 |
| | | | | |
| Annual Operations (AV Gas) | 2,677 | 3,016 | 3,504 | 4,111 |
| Average AV Gas Fuel Ratio (Gal.) | 1.12 | 1.12 | 1.12 | 1.12 |
| Total Annual AV Gas Storage Required (Gal.) | **2,998** | **3,378** | **3,924** | **4,604** |
| Existing Storage Capacity | 5,000 | 5,000 | 5,000 | 5,000 |
| Minimum Delivery Frequency (Deliveries Per Year) | 0.6 | 0.7 | 0.8 | 0.9 |
| | | | | |
| Annual Operations (Jet-A) | 1,256 | 1,934 | 2,146 | 2,539 |
| Average Jet-A Fuel Ratio (Gal.) | 7.34 | 7.34 | 7.34 | 7.34 |
| Total Annual Jet-A Fuel Storage Required (Gal.) | **9,219** | **14,196** | **15,752** | **18,636** |
| Existing Storage Capacity | 5,000 | 5,000 | 5,000 | 5,000 |
| Minimum Delivery Frequency (Deliveries Per Year) | 1.8 | 2.8 | 3.2 | 3.7 |

Fuel tanks located on an airfield should be situated at least 50 feet from any fixed or movable object. Examples of fixed or movable objects include aircraft parking spaces (tiedowns), hangars, office buildings, and auto parking areas. This not only reduces the risk of possible impacts to the tanks by aircraft, but also aids in the movement of vehicles around the tanks for fueling or tank refilling purposes. When installing fuel tanks on an airport or relocating fuel tanks to a different site, it is also recommended that the tanks be installed and operated in accordance with Environmental Protection Agency regulations to reduce the risk of spills, accidents, and contamination.

### 5.2.4 Parking

Adequate parking should be provided to accommodate airport employees, visitors, passengers, and pilots. Automobile parking requirements can be estimated as 3.5 automobiles per peak hour operation. Using the peak hour operations found in Table IV-12, 11 parking spaces would be required in 2001 (3 x 3.5), 14 in 2006 (4 x 3.5), and 18 in 2016 (5 x 3.5). The existing parking area, which also provides parking for several Bureau of Indian Affairs (BIA) Forest Service shops, meets this requirement for the entire planning period.

### 5.2.5 Fencing

The airport property should be protected by a perimeter fence to be located outside of the Runway Object Free Area or Building Restriction Line. For the Whiteriver Airport, this fence should be constructed of five strand barbed wire to a height of four feet. The fence is intended to prevent intrusions onto airport property by people and/or animals. It is also

recommended that the Airport Sponsor maintain the chain link fence constructed between the automobile parking/public areas and the aircraft maneuvering areas. This enhances safety and security by protecting against inadvertent access by the general public.

### 5.2.6 Airport Rescue and Fire Fighting (ARFF) Equipment

Airport Rescue and Fire Fighting Equipment is not required at non-certificated airports; however, procedures should be in place to ensure appropriate ARFF response in case of an accident or emergency. An efficient access route onto the airport for ARFF equipment should be identified and maintained. Aviation rated fire extinguisher bottles should be immediately available in the vicinity of the apron.

## 5.3 LAND USE COMPATIBILITY AND CONTROL

### 5.3.1 Runway Protection Zones and Approach Surfaces

The existing Runway Protection Zone (RPZ) are established for category A and B aircraft and visual approach minimums. Although a future nonprecision instrument approach is planned, the size of the future RPZ will remain the same with approach visibility minimums of one mile or greater. The White Mountain Apache Tribe currently owns and controls all land within the existing and ultimate Runway Protection Zones. A portion of the Runway 19 RPZ is leased to the Bureau of Indian Affairs (BIA) Roads Department for a vehicle parking and equipment storage. This use is compatible with airport operations. Land uses prohibited within the RPZ are residences and places of public assembly.

The existing Approach Surfaces for both ends of Runway 9/27 are classified as visual/utility with a slope of 20:1. A future nonprecision instrument approach with one-mile visibility minimums is expected to be implemented at the airport, resulting in an larger Approach Surface with a slope of 34:1. The placements of objects which penetrate the Approach Surface (i.e. obstructions), or any other FAR Part 77 surfaces, should be avoided. When determined that an obstruction is not a hazard to navigable airspace, it should be marked and lighted as specified in the aeronautical study determination. If it is determined that an obstruction is a hazard to navigable airspace, the obstruction should be removed.

### 5.3.2 Airport Height Restriction Zoning

Areas around airports can pose certain hazards to air navigation if appropriate steps are not taken to ensure that buildings and other structures do not penetrate the FAR Part 77 Imaginary Surfaces (described in Chapter II, Facility Inventory). Any objects which penetrate a Part 77 airspace surface should be equipped with the appropriate obstruction lighting. The FAA therefore recommends that all Airport Sponsors adopt a zoning

ordinance to protect these Part 77 Surfaces. A model of this type of zoning ordinance is included as Appendix C of this report. It is recommended that the White Mountain Apache Tribe establish a height restriction zoning ordinance for the Whiteriver Airport and periodically review these height restrictions to ensure continued compliance with FAR Part 77.

### 5.3.3 Compatible Land Uses

In addition to ensuring that the Part 77 Surfaces are free from current and future obstructions, it is recommended that the Airport Sponsor make every effort to eliminate all incompatible land uses from the immediate area of the airport. For example, the FAA states in FAA Order 5200.5 (FAA Guidance Concerning Sanitary Landfills On Or Near Airports) and 40 CFR Part 257 (Criteria for Classification of Solid Waste Disposal Facilities) that landfills and/or transfer stations are incompatible land uses with airports. Therefore, these types of facilities should be located at least 5,000 feet from any point on a runway which serves piston type aircraft and 10,000 feet from any point on a runway which serves turbine type aircraft. Furthermore, any facility which may attract wildlife (especially birds) such as sewage treatment ponds and waste water treatment plants should also be located this same distance from any point on a runway. There are currently two sewage treatment ponds within 5,000 feet of Runway 1/19; however, there have been no reports of bird attraction to the ponds or any hazards to aircraft operations caused by the location of the ponds. No action is necessary at this time. If bird hazards from the ponds are reported in the future, mitigation measures should be implemented to control or eliminate the hazard.

A land use zoning ordinance should be enacted by the White Mountain Apache Tribe to protect against incompatible land uses in the vicinity of the airport.

## 5.4 SUMMARY

In summary, the facility requirements for the Whiteriver Airport are based on the types of aircraft using the existing airport now and those expected to use the airport in the future. The proposed facilities are based on standards given in AC 150/5300-13, and in coordination with the Airport Sponsor, and the Federal Aviation Administration. These facilities will enable the Whiteriver Airport to serve its users in the best possible manner. The recommended airside and landside facilities are summarized in Table V-7 and V-8 below:

**TABLE V-7**

| Recommended Minimum Airside Facilities | | | | | |
|---|---|---|---|---|---|
| **Facility** | **1996 Existing** | **1996 Requirement** | **2001** | **2006** | **2016** |
| **Runway 01/19** | | | | | |
| Length (feet) | 6,288 | 6,288 | 6,288 | 6,288 | 6,288 |
| Width (feet) | 75 | 75 | 75 | 75 | 75 |
| Strength (lb.) | 12,500 SWG | 80,000 DWG | 80,000 DWG | 80,000 DWG | 80,000 DWG |
| **Parallel Taxiway** | | | | | |
| Runway Separation (feet) | 200 | 240 | 240 | 240 | 240 |
| Length (feet) | 5,200 | 6,288 | 6,288 | 6,288 | 6,288 |
| Width (feet) | 35 | 35 | 35 | 35 | 35 |
| Strength (lb.) | 12,500 SWG | 80,000 DWG | 80,000 DWG | 80,000 DWG | 80,000 DWG |
| **NAVAIDS** | | | | | |
| Approach Rwy 1 | Visual | Visual | GPS Nonprecision | GPS Nonprecision | GPS Nonprecision |
| Approach Rwy 19 | Visual | Visual | GPS Nonprecision | GPS Nonprecision | GPS Nonprecision |
| **Lighting & Visual Aids** | | | | | |
| Runway/Taxiway Edge | MIRL / None | MIRL / MITL | MIRL / MITL | MIRL / MITL | MIRL / MITL |
| REILs | None | Yes | Yes | Yes | Yes |
| Approach Slope Indicators | None | PAPI | PAPI | PAPI | PAPI |
| Segmented Circle/Wind Cone/Beacon | Lighted/Lighted/No | Lighted/Lighted/Yes | Lighted/Lighted/Yes | Lighted/Lighted/Yes | Lighted/Lighted/Yes |
| **Apron** | | | | | |
| Tie Downs | 12 | 10 | 12 | 15 | 17 |
| Apron Pavement (S.Y.) | 5,100 | 3,400 | 4,100 | 5,100 | 5,800 |

**TABLE V-8**

| Recommended Minimum Landside Facilities | | | | | |
|---|---|---|---|---|---|
| **Facility** | **Existing** | **1996 Requirement** | **2001** | **2006** | **2016** |
| **Access & Parking** | | | | | |
| Automobile | 20 | 11 | 11 | 14 | 18 |
| **Hangar Facilities** | | | | | |
| Hangars | 0 | 0 | 0 | 0 | 0 |
| Sun-Shades | 0 | 6 | 6 | 8 | 9 |
| **Fuel Storage** | | | | | |
| 100 LL (gal) | 0 | 5,000 | 5,000 | 5,000 | 5,000 |
| Jet-A (gal) | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| Fuel Service | 8:00-6:00 | 8:00-6:00 | 24 hr Self Serve | 24 hr Self Serve | 24 hr Self Serve |
| **Other:** | | | | | |
| AWOS | No | Yes | Yes | Yes | Yes |
| Unicom | Monitored 8:00-6:00 | Monitored 8:00-6:00 | Monitored 8:00-6:00 | Monitored 8:00-6:00 | Monitored 8:00-6:00 |